

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

CGGACCACCA GCTGGTACTT GA

22

(2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

GCTGCCCTAG AGGGTTTTGC TA

22

(2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

CGAGACGGCA GAAAGCAGA

19

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

GTACAAGTCC CGGGTGGTGA G

21

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

ATACCTAAGA CAAGTTTGCT

20

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

ATCAACCAAT AGAGTCCACC A

21

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

CATCGTTATG AGTGACTGGA

20

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

ACTGATGATC ACCCTCCTGC TCA

23

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GGACAGGCAT TGTTCTTGG

20

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

TAACTGTGGT TTCCATGACG

20

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

AGGTACTCTT GGTGCAGCCC

20

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

AGCATATAGG AACAGTCGTG CC

22

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

AGTGGACATG AAGAGCACGA A

21

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

AGCTCTGGCA CTGCTAGCGT CACTGATTTT

30

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

CAGGTTTCATC GCTCAGCTCC

20

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

GGCTGTCACC GCTTTCTTGG

20

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

AGTGTTGGCA CTTCTGTGG

19

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

AGCATGGGAG ATGTTGGCAG C

21

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

CTGGTTTAAA CTGGGCCCCAG GAGAGGAGCA

30

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

TGGAGCGAAG GTTAGTGGTC

20

(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

TACCTGGCAC CTGAGTGTGG AG

22

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

AGAATTGGAT CATTTCTGAC AGGG

24

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

AGACATGGTC TTTGGCTTCA GGGTC

25

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

CAGACCAATG TGACAATTTT CCCCAAATGT

30

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

CTACCTTCCA CGACTTCACC

20

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

AAGTCTTTTA TAAGGCTCCG GC

22

(2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

AGGCCATGGT GTCATCCATC

20

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

AGAGAGAGAG TAGGTCCGCG G

21

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA to mRNA

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

CCAATGGGGG AGGAGAGACC AAGACCAATA

30



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(21) International Application Number: PCT/EP99/01392 (22) International Filing Date: 1 March 1999 (01.03.99) (30) Priority Data: 98200655.3 4 March 1998 (04.03.98) EP 98204231.9 14 December 1998 (14.12.98) EP (71) Applicant (for all designated States except US): AKZO NOBEL N.V. [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL). (72) Inventors; and (75) Inventors/Applicants (for US only): VERVOORT, Marcel, Bartolina, Hendrikus, Johannes [NL/NL]; Streefkerkstraat 77, NL-1107 LM Amsterdam (NL). VAN DEN BRULE, Adrianus, Johannes, Christiaan [NL/NL]; Boekweitdonk 8, NL-1112 JJ Diemen (NL). MIDDELDORP, Jaap, Michiel [NL/NL]; Staringstraat 151, NL-5343 GD Oss (NL). (74) Agent: VAN GENT, M.; P.O. Box 20, NL-5340 BH Oss (NL).		(81) Designated States: AU, CA, ID, JP, KR, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 4 May 2000 (04.05.00)
(54) Title: OLIGONUCLEOTIDES FOR THE AMPLIFICATION AND DETECTION OF EPSTEIN BARR VIRUS (EBV) NUCLEIC ACID (57) Abstract <p>The present invention is concerned with oligonucleotides that can be used as in the amplification and detection of Epstein Barr Virus (EBV) nucleic acid, in particular RNA-specific sequences. Furthermore a method for the diagnosis of EBV associated malignant and non-malignant diseases is provided. The oligonucleotides according to the present invention are specifically suited for the detection of EBV gene expression in circulating peripheral blood cells, in human (tumor) tissue samples and thin sections thereof using "in solution" amplification or "in situ" amplification techniques and in other biological samples potentially containing EBV-infected cells.</p>		

*(Referred to in PCT Gazette No. 47/1999, Section II)

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INTERNATIONAL SEARCH REPORT

Int. Application No

PCT/EP 99/01392

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C12Q1/70

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IPC 6 C12Q

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEUNG ET AL.: "DETECTION OF VIRAL SEQUENCES BY INTERNALLY CALIBRATED GENE AMPLIFICATION" BIOTECHNIQUES, vol. 14, no. 5, 1993, pages 785-789, XP002076373	1,10,11, 15,16
Y	the whole document	2-4,7-9, 12,13
X	WO 93 23569 A (RIBOZYME PHARM INC) 25 November 1993 (1993-11-25)	10,11,14
Y	See EBV target sequence 18,19 and 21. the whole document	1,2,8,9, 12,13, 15,16
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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 37669 A (UNIV MASSACHUSETTS) 16 October 1997 (1997-10-16)	10,11,14
Y	See BNLFI specific antisense oligonucleotides N3,N5 and N7, claim 23, pages 58-59; antisense oligonucleotide TP7, claim 29, page 61.	1,2,8,9, 12,13, 15,16
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 114 (C-1171), 24 February 1994 (1994-02-24) & JP 05 309000 A (IATRON LAB INC), 22 November 1993 (1993-11-22)	10,11,14
Y	See probes for with ID/AC E05922, Q54747, E05923, E05928. abstract	1,2,8,9, 12,13, 15,16
X	WO 93 07882 A (ISIS PHARMACEUTICALS INC) 29 April 1993 (1993-04-29)	10,11
Y	See claim 1, pages 20-21, antisense oligomer targeting BMRF1 and antisense oligomer targeting EBER-1. the whole document	1-5,7-9, 12-16
X	WO 98 04746 A (SINAI SCHOOL MEDICINE) 5 February 1998 (1998-02-05)	10,11
Y	See example 11, page 80, probes (AC/ID: V22786 and V22787).	1,2,8,9, 12,13, 15,16
Y	KIEVITS T ET AL: "NASBA TM ISOTHERMAL ENZYMATIC IN VITRO NUCLEIC ACID AMPLIFICATION OPTIMIZED FOR THE DIAGNOSIS OF HIV-1 INFECTION" JOURNAL OF VIROLOGICAL METHODS, vol. 35, no. 3, 1 December 1991 (1991-12-01), pages 273-286, XP000576430 the whole document	1-16
Y	WO 97 32036 A (AKZO NOBEL NV ;OVYN CAROLINE LOUISE LUCIENNE (BE); GEMEN BOB VAN () 4 September 1997 (1997-09-04) the whole document	1-16
Y	EP 0 628 568 A (BOEHRINGER MANNHEIM GMBH) 14 December 1994 (1994-12-14) See example 3, pages 11-12. the whole document	1-16
Y	DATABASE NCBI 'Online! Accession: NC 001345, 1983 "HUMAN HERPESVIRUS 4 GENOME" XP002131606 abstract	1-16

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INTERNATIONAL SEARCH REPORT

Int. Application No.

PCT/EP 99/01392

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ZHANG ET AL.: "TRANSCRIPTIONAL EXPRESSION OF THE VIRAL GENOME IN THE EPSTEIN-BARR VIRUS-INDUCED TAMARIN LYMPHOMA AND THE CORRESPONDING LYMPHOBLASTOID TUMOUR LINES" VIRUS RESEARCH, vol. 26, 1992, pages 153-166, XP000877165 See TABLE 2 the whole document	1-16
Y	TIERNEY ET AL.: "EPSTEIN-BARR VIRUS LATENCY IN BLOOD MONONUCLEAR CELLS: ANALYSIS OF VIRAL GENE TRANSCRIPTION DURING PRIMARY INFECTION AND IN THE CARRIER STATE" JOURNAL OF VIROLOGY, vol. 68, no. 11, November 1994 (1994-11), pages 7374-7385, XP002118061 the whole document	1-4, 7-16
Y	BROOKS ET AL.: "EPSTEIN-BARR VIRUS LATENT GENE TRANSCRIPTION IN NASOPHARYNGEAL CARCINOMA CELLS: COEXPRESSION OF EBNA1, LMP1, AND LMP2 TRANSCRIPTS" JOURNAL OF VIROLOGY, vol. 66, no. 5, 1992, pages 2689-2697, XP002118062 the whole document	1-4, 7-16
Y	BRINK ET AL.: "MULTIPRIMED cDNA SYNTHESIS FOLLOWED BY PCR IS THE MOST SUITABLE METHOD FOR EPSTEIN-BARR VIRUS TRANSCRIPT ANALYSIS IN SMALL LYMPHOMA BIOPSIES" MOL. CELL. PROBES, vol. 11, 1997, pages 39-47, XP002131581 the whole document	1-4, 7-16
Y	WEI ET AL.: "EXPRESSION AND TUMORIGENICITY OF THE EPSTEIN-BARR VIRUS BARF1 GENE IN HUMAN LOUCKES B-LYMPHOCYTE CELL LINE" CANCER RESEARCH, vol. 54, 1994, pages 1843-1848, XP002131583 the whole document	1, 2, 5, 7-16
Y	TOUITOU ET AL.: "TRANSCRIPTIONAL ANALYSIS OF THE EPSTEIN-BARR VIRUS INTERLEUKIN-10 HOMOLOGUE DURING THE LYTIC CYCLE" J. GEN. VIROL., vol. 77, 1996, pages 1163-1168, XP002131582 the whole document	1, 2, 6, 8-16

-/-

INTERNATIONAL SEARCH REPORT

In. ational Application No

PCT/EP 99/01392

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LABRECQUE ET AL.: "EPSTEIN-BARR VIRUS IN EPITHELIAL CELL TUMORS: A BREAST CANCER STUDY" CANCER RESEARCH, vol. 55, 1995, pages 39-45, XP002131605 the whole document	1,2,8-16
A	EP 0 574 048 A (AKZO NV) 15 December 1993 (1993-12-15) the whole document	
A	WO 93 11267 A (CANCER RES INST) 10 June 1993 (1993-06-10) the whole document	
A	DE 196 27 932 A (BOEHRINGER MANNHEIM GMBH) 15 January 1998 (1998-01-15) the whole document	
A	WO 95 03415 A (WOLF HANS JOACHIM ;REISCHL UDO (DE); MOTZ MANFRED (DE)) 2 February 1995 (1995-02-02) the whole document	
A	EP 0 316 170 A (GENE GALWAY LIMITED G) 17 May 1989 (1989-05-17) the whole document	
P,X	BRINK ET AL.: "NUCLEIC ACID SEQUENCE-BASED AMPLIFICATION, A NEW METHOD FOR ANALYSIS OF SPLICED AND UNSPLICED EPSTEIN-BARR VIRUS LATENT TRANSCRIPTS, AND ITS COMPARISON WITH REVERSE TRANSCRIPTASE" JOURNAL OF CLINICAL MICROBIOLOGY, vol. 36, no. 11, November 1998 (1998-11), pages 3164-169, XP002118063 the whole document	1-5,7-16
T	HAYES ET AL.: "EXPRESSION OF EPSTEIN-BARR VIRUS (EBV) TRANSCRIPTS ENCODING HOMOLOGUES TO IMPORTANT HUMAN PROTEINS IN DIVERSE EBV ASSOCIATED DISEASES" MOLECULAR PATHOLOGY, vol. 52, no. 2, April 1999 (1999-04), pages 97-103, XP000877178 the whole document	1,2,6, 8-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 99/01392

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-4,7-16 (all partially)

Oligonucleotides with Seq.IDs 1-5 corresponding to the sequence of the BKRF1 reading frame spanning nucleotides 107950-109872 of EBNA-1, wherein Seq.ID 3 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

2. Claims: 1,2,8-16 (all partially)

Oligonucleotides with Seq.IDs 6-11 corresponding to the sequence of the reading frame spanning nucleotides 6629-6795 of EBER-1, wherein Seq.ID 6 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

3. Claims: 1,2,8-16 (all partially)

Oligonucleotides with Seq.IDs 12-16 corresponding to the sequence of the BNLF1 reading frame spanning nucleotides 169474-169207 of LMP-1, wherein Seq.ID 12 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

4. Claims: 1-4,7-16 (all partially)

Oligonucleotides with Seq.IDs 17-21 corresponding to the sequence of the exons 2,3,4,5,6,7 and 8 of LMP-2, wherein Seq.ID 19 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

5. Claims: 1,2,6-10 (all partially)

Oligonucleotides with Seq.IDs 27-31 corresponding to the sequence of the BCRF1 reading frame spanning nucleotides 8675-10184 of vIL10, wherein Seq.ID 30 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

6. Claims: 1,2,5,7-16 (all partially)

Oligonucleotides with Seq.IDs 22-26 corresponding to the

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

sequence of the BARF1 reading frame spanning nucleotides 165504-166166, wherein Seq.ID 24 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

7. Claims: 1,2,6-16 (all partially)

Oligonucleotides with Seq.IDs 32-36 corresponding to the sequence of the BDLF2 reading frame spanning nucleotides 132389-131130, wherein Seq.ID 32 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

INTERNATIONAL SEARCH REPORT

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PCT/EP 99/01392

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